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## SPECIAL REPORT

### Enabling next-generation Space IoT with a unified memory architecture

PAUL AMIJO, AVALANCHE TECHNOLOGY

KRISTINE SCHROEDER, AVALANCHE TECHNOLOGY

The unique environmental challenges of space require truly distributed edge computing for scale and autonomous operation – these systems must have sufficient processing capability and revamped memory architectures to support the vast collection and processing of data in real time. Standardizing around common flexible architectures that embrace universal memory is critical to enabling robust designs with optimized size, weight, power, and cost (SWaP-C), all critical elements for the space community. However, until the advent of recent spin torque transfer (STT) magnetoresistive random access memory (MRAM) solutions, there were no legacy memory technologies that could support the reliability, speed, and robustness required for this pivotal role.

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## GUEST BLOG

### Thoughts from the Satellite 2022 show: MILSATCOM trends and buzz on the show floor

JEFF LESSNER, HUGHES NETWORK SYSTEMS

Walking the floors and attending the sessions at the



Satellite 2022 show I found that the buzz within the military satellite industry continues to be the deep need for greater resilience in the Department of Defense (DoD) communications architecture. But discussion these days isn't just about the need for it, it's about technologies that can deliver it.

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## MIL TECH TRENDS

### Incorporating DO-326A security airworthiness into software-development life cycle

RICARDO CAMACHO, PARASOFT

Before jumping right into adopting DO-326A to address cybersecurity certification, it needs to be put into the context of DO-178, which is the overarching standard. DO-178 is a process standard that contains steps for the software used in airborne systems. DO-178C, also known as ED-12C in Europe, is the latest version that aerospace systems and software engineers use as guidance to ensure airworthiness. Though it continues to evolve, one document cannot encompass all development needs and supporting or complementing documents to DO-178 have evolved over time. DO-326A is one of these; its purpose is to provide a framework with objectives and process guidance in addressing

intentional and unintentional security threats to aircraft systems.

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## MIL TECH TRENDS

### Adding new high-frequency capabilities to military avionics applications

TED PREMA, TIMES MICROWAVE SYSTEMS

Radio frequency (RF) system manufacturers are creating advanced new system designs to accommodate extremely restricted space constraints and rising operating frequencies in military avionics applications.

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## GUEST BLOG

### The Space Force, Lagrange points, xenomorphs, and the Kill Web

RAY ALDERMAN, VITA

So far, we have studied how the U.S. Army (IBCS) and Navy (CEC) programs have been conducting experiments, to integrate their weapons and ISR

(intelligence, surveillance, and reconnaissance) systems into the Kill Web mesh network. Now, let's take a look at what the Space Force is doing. The Space Force was formed as the fourth armed service in 2019 and operates under the Air Force.

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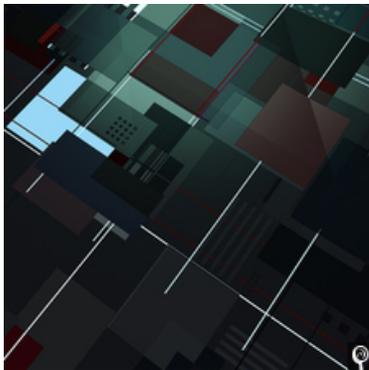
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JERRY GIPPER, EDITORIAL DIRECTOR

Paramount to the success of an industry is the strength of its encompassing business ecosystem. A thriving, stable ecosystem where every element works together forms a profitable market for everyone involved.”

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